PRODUCTION OF COPPER-CONTAINING STAINLESS STEEL IMPROVED IN ANTIBACTERIAL PROPERTY

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Abstract of **JP9249981**

PROBLEM TO BE SOLVED: To produce a stainless steel excellent in antibacterial properties and surface quality by immersing a Cu-contg. stainless steel into an acidic soln. contg. hydrochloric acid and nitric acid with specified concns. and allowing a surface layer in which the concn. of Cu is specified to expose. SOLUTION: A stainless steel contg., by weight, >=0.3% Cu or the worked product thereof is immersed to an acidic soln. having 0.2 to 5.0% hydrochloric acid concn. and 1.0 to 20.0% nitric acid concn. In this way, a surface layer part having >=0.10 atomic % Cu concn. is formed, and excellent antibacterial properties can be obtd. Hydrochloric acid in the acidic soln. gives an effect of increasing the Cu concn. in the surface layer part. In the case the stainless steel is immersed into the hydrochloric acid-contg. acidic soln., the surface layer part exposes after the breaking of a passive film, but, when the passive film is reformed, there may occur the case in which impurities are accumulated on the base materal to color the surface. In the case nitric acid is present in this system, impurities are dissolved away at the time of repassivation, so that the surface state characteristic of the stainless steel free from coloring can be obtd.